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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,071	09/04/2001	Masanobu Asaoka	35.C15758	1151
5514	7590	09/22/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			SCHWARTZ, PAMELA R	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	

1774

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,071

Applicant(s)

ASAOKA ET AL.

Examiner

Pamela R. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13, 15 and 17-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-13, 15 and 17-22 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/21/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Applicant's election with traverse of Group III in the reply filed on June 25, 2004 is acknowledged. The traversal is on the ground(s) that if the claims are examined together, the overall examination time will be less and the prosecution will be handled in a more uniform manner. This is not found persuasive because the searches and issues are not coextensive, placing a considerable additional burden on the examiner if the groups are examined together. Also, restriction is proper for reasons given in the previous office action.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (6,511,736) in view of any of JP 10129112, Darsillo et al (WO 01/25534), and Hirose et al. (EP 0,732,219). The reference discloses an ink jet recording material having excellent gloss and high color density (see the abstract). The material comprises a substrate and a multi-layered ink fixing layer, each of which comprises pigment and binder. The pigment may be alumina, however, the crystallinity of the alumina is not specified (see col. 2, line 36 to 51). The outermost ink fixing layer is formed by a cast-coating method (see col. 2, lines 50-51). The reference does not measure gloss at 20°, but rather at 75° (see col. 3, lines 60-63).

The reference discloses the use of a paper support of wood pulp (see col. 4, lines 64-65). The support preferably has a basis weight of 20 to 400 g/m² and a sizing degree of 1 to 200 seconds at a basis weight of 100 g/m² (see col. 5, lines 43 to 55). The medium may have an undercoat of pigment and binder (see col. 6, lines 15-32). Included as pigments are silica, zinc oxide, aluminum oxide, and calcium carbonate.

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The ink fixing layer contains pigment in the form of secondary particles which have an average particle size of 1 μm or less, most preferably 20 to 100 nm (see col. 9, lines 39-47, 52-56, and 63-67). The pigment is present in an amount of 50 wt% or more (see col. 11, lines 11-22) and the binder is present at a ratio of 1 to 200 parts by weight per 100 parts by weight of the pigment (col. 12, lines 39-46). The cast-coated layer is formed using a specular casting drum. The coating composition may be coated and dried, then rewetted with water and pressed onto the heated specular surface of the drum and dried (see col. 15, lines 30-42).

The reference does not disclose specular gloss in terms of 20°, however, it measures gloss in terms of 75°, has clearly identified gloss as a desired property that can be measured and should be achieved, and identifies the re-wet caste method to achieve gloss on the outer layer. Based upon this disclosure, it would have been obvious to one of ordinary skill in the art to control the process in order to achieve the desired level of gloss.

Finally, the reference does not disclose the specific surface area of the pigment. This is a well-known property of pigments and is used as a measure of the porosity and ability to absorb ink, a critical property in the field of ink jet recording. Therefore, it would have been obvious to one of ordinary skill in this art to control the conventional property of specific surface area of the pigment in the ink receiving layer in order to achieve desired ink absorption and ink drying speed for the medium.

With respect to the type of alumina included, since the primary reference is silent with respect to crystallinity of the alumina used therein, one of ordinary skill in the art

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would have looked to the state of the art to determine alumina to use in forming the medium of the primary reference. The secondary references each teach use of crystalline alumina as alumina for formation of an ink receiving layer in an ink jet recording medium. See Hirose et al. page 3, line 56 to page 4, line 4, Example 1 of Darsillo et al. and the cited Japanese abstract. Since crystalline alumina is commonly used in the art with achievement of conventionally sought after properties, it would have been obvious to one of ordinary skill in the art to utilize a crystalline alumina as the alumina of the primary reference.

3. Claims 13 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (6,511,736) in view of any of JP 10129112, Darsillo et al (WO 01/25534), and Hirose et al. (EP 0,732,219) as applied to claim 13 above, and further in view of either one of Hosoi et al. (6,200,670) or Ikezawa et al. (5,759,673). Ikezawa et al. teach an ink jet recording sheet having a fibrous substrate and an undercoat layer which may contain an inorganic pigment such as calcium carbonate, zinc oxide, alumina, silica or barium sulfate (see col. 3, lines 12-18, col. 4, lines 50-58, col. 5, lines 5-15. A white pigment is presumably used to whiten the overall appearance of the medium. Hosoi et al. teach an ink receiving medium having a paper substrate and a barium sulfate containing underlayer (see col. 5, lines 42-59 and col. 6, lines 19-33). The barium sulfate is used for its ink solvent absorbency and to provide smoothness to the medium. Based upon these teachings in the prior art, it would have been obvious to one of ordinary skill in the art to include barium sulfate in the underlayer or intermediate layer of the primary reference in order to whiten the medium, increase smoothness or

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increase ink absorbency in the layer. It would have been obvious to include barium sulfate in lieu of other white inorganic pigments or in addition to other equivalent pigments for these purposes.

4. Claims 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (6,511,736) in view of any of JP 10129112, Darsillo et al (WO 01/25534), and Hirose et al. (EP 0,732,219) as applied to claim 13 above, and further in view of Tomizawa et al. (5,985,425). The reference teaches an ink jet recording medium including a matting layer on the side opposite the recording layer. The matting layer contains inorganic material which may be alumina for purposes of curl prevention and pen-writing adaptability (see col. 6, line 37 to col. 7, line 2). Therefore, it would have been obvious to one of ordinary skill in the art to include such a back layer on the medium of the primary reference for the purpose of curl prevention or pen-writing adaptability as taught by the secondary reference.

5. Applicant's arguments with respect to claims 13-22 have been considered but are moot in view of the new ground(s) of rejection. Applicants argue that the Example of Asano et al. disclose a content of binder higher than that of the claimed invention. This is not persuasive because the reference disclosure is not limited to the examples and the reference specifically discloses a range of binder to pigment that overlaps with the ranges of the instant claims.

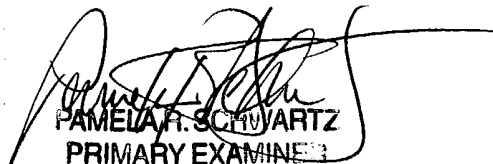
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela Schwartz whose telephone number is (571) 272-1528.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PRSchwartz
September 18, 2004


PAMELA F. SCHWARTZ
PRIMARY EXAMINER